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# MULTIMEDIA UNIVERSITY

## FINAL EXAMINATION

TRIMESTER 2, 2016/2017

### PCA0016 – COMPUTER APPLICATIONS AND PROGRAMMING

( Foundation in Engineering )

4 MARCH 2017  
2:30 pm – 4:30 pm  
( 2 Hours )

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#### INSTRUCTIONS TO STUDENTS

1. This question paper consists of **EIGHT** pages (excluding the cover page) with **THREE** Sections only.
2. Answer **ALL** questions in **Section A, B** and **C**.
3. Please mark the answers for **Section A** and **Section B** on the **OMR form** provided.
4. Please write the answers for **Section C** in the **Answer Booklet** provided.

**SECTION A: MULTIPLE CHOICE [25 MARKS]**

**Instructions:** Answer **ALL** questions in this section. Shade your answers on the **OMR** sheet.

1. \_\_\_\_\_ refers to the use of computers to assist with fabrication process.
  - A. Computer Aided Design (CAD)
  - B. Computer Aided Manufacturing (CAM)
  - C. Computer Aided Engineering (CAE)
  - D. Computer Aided Instruction (CAI)
2. A(n) \_\_\_\_\_ is a real time internet communication, whereby connected users are able to exchange messages with each other.
  - A. text message
  - B. picture message
  - C. video message
  - D. instant message
3. The process of making works such as books, magazines, music to the public is often referred as \_\_\_\_\_.
  - A. publishing
  - B. sharing
  - C. disseminating
  - D. distribution
4. Mobile users usually use \_\_\_\_\_ to store, organize and play digital media.
  - A. handheld computers
  - B. Personal Digital Assistant (PDA)
  - C. portable media player
  - D. Table PC
5. \_\_\_\_\_ generates images by pushing electrically heated pins against the heat sensitive paper.
  - A. Laser printer
  - B. Label printer
  - C. Dye-sublimation printer
  - D. Dot-matrix printer
6. Which of the following devices are capable of translating personal characteristics into a digital code?
  - A. Pointing devices
  - B. Biometric devices
  - C. Reading devices
  - D. Data collection devices.

**Continued...**

7. \_\_\_\_\_ is a small program that tells the operating system how to communicate with a specific device.
- A. Driver
  - B. Utility program
  - C. Service pack
  - D. System software
8. Mobile device and many consumer electronics have an embedded operating system, that resides on a \_\_\_\_\_ chip.
- A. cache
  - B. Read only memory (ROM)
  - C. Random Access Memory (RAM)
  - D. Double Data Rate (DDR2)
9. \_\_\_\_\_ is the process of transferring items from \_\_\_\_\_ to \_\_\_\_\_.
- A. Reading, memory, cache
  - B. Reading, memory, storage medium
  - C. Writing, memory cache
  - D. Writing, memory, storage medium
10. \_\_\_\_\_ consists of the programs that control or maintain the operations of the computer and its devices.
- A. Application software
  - B. System software
  - C. Intrusion detection software
  - D. Communication software
11. The process of starting or re-starting a computer is called \_\_\_\_\_.
- A. spooling
  - B. buffering
  - C. paging
  - D. booting
12. Which of the following software is the most suitable for organizing a database?
- A. Database monitoring software
  - B. Database management software
  - C. Database design software
  - D. Database client software
13. Professional designers use \_\_\_\_\_ to create sophisticated documents that contain text, graphics, and many colors.
- A. Multimedia authoring software
  - B. Illustration software
  - C. Photo Editing software
  - D. Desktop publishing software

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14. The only language that a computer can recognize directly is \_\_\_\_\_.  
A. machine language  
B. assembly language  
C. procedural language  
D. Visual programming language
15. \_\_\_\_\_ is a \_\_\_\_\_ that can be used to query database tables.  
A. SQL, 4GL  
B. SQL, 3GL  
C. 4GL, SQL  
D. 3GL, SQL
16. Which of the following had been adopted as a standard notation for object modeling and development?  
A. HTML  
B. XHTML  
C. XML  
D. UML
17. \_\_\_\_\_ is a strategy where programmers immediately begin coding and testing solutions as soon as requirements are defined.  
A. Debugging  
B. Implementation  
C. Extreme programming  
D. Testing
18. A \_\_\_\_\_ is a \_\_\_\_\_ that combines services from two or more source.  
A. web application, mashup  
B. mashup, web application  
C. mashup, network  
D. network, mashup
19. The layout of computers and devices in a communication network is called \_\_\_\_\_.  
A. network architecture  
B. network standard  
C. network topology  
D. network communication
20. A \_\_\_\_\_ connects multiple computers together and transmit data to its correct destination on a network.  
A. hub  
B. switch  
C. router  
D. cable
21. \_\_\_\_\_ is a service that carries voice, data, video and multimedia at very high speed.  
A. T3-line  
B. Digital Subscriber line (DSL)  
C. Fiber to the Premises (FTTP)  
D. Asynchronous Transfer Media (ATM)

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22. Which of the following image compression is NOT supported by web?
- A. JPEG
  - B. GIF
  - C. PNG
  - D. PCX
23. \_\_\_\_\_ refers to the number of bits used for each color component of a pixel.
- A. Bit rate
  - B. Bit depth
  - C. Baud rate
  - D. Sampling rate
24. \_\_\_\_\_ creates \_\_\_\_\_ color blends.
- A. Anti-aliasing, solid
  - B. Anti-aliasing, non-solid
  - C. Aliasing, solid
  - D. Aliasing, non-solid
25. *"Works by taking advantage of the fact that only a small amount of image changes from frame to frame"*
- Which of the following compression is best described by the above statement?
- A. Audio compression
  - B. Video compression
  - C. Graphic compression
  - D. Text compression

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**SECTION B: TRUE OR FALSE [15 MARKS]**

**Instructions:** Shade your answers on the OMR form provided. Shade **A** for **True** and **B** for **False**.

26. An input device allows user to enter information into a computer.
27. Authorized people can access programs in mainframe using terminals or personal computers.
28. Voice recognition is the process of entering input by speaking into microphone.
29. Resolution is the smallest element in an electronic display.
30. Proprietary software is privately owned and limited to a specific vendor or computer model.
31. Client operating systems can operate with or without a network.
32. A functional language is a programming language whose natural programming structure is useful in mathematical programs.
33. C++ is a programming language that allows programmers easily build complex task oriented object based programs.
34. CGI (Common Gateway Interface) is the communication standard that defines how a Web server communicates with outside resources.
35. UWB (Ultra wideband) devices communicate to each other through long range radio waves.
36. Cable modem is a digital modem that sends and receives data through cable television network.
37. Vector images will appear blocky when the image is being enlarged.
38. Immersive virtual reality does not require special gadget during the simulation.
39. A script is an interpreted program that usually runs on the client side.
40. On a star network, if the switch fails, only the affected network portion is inoperable.

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**SECTION C: SHORT ANSWER [60 MARKS]**

**Instructions:** Answer ALL questions in this section. Write your answers in the Answer Booklet.

**QUESTION 1 [20 marks]**

- i Briefly describe TWO (2) features that determine the quality of a LCD screen.  
[4 marks]
- ii A system unit contains both volatile and non-volatile memory. What is the main difference between these two types of memory systems? Provide an example for each type of memory system.  
[4 marks]
- iii A wireless keyboard transmits data to a system unit using wireless technology. Discuss TWO (2) wireless technologies that are widely used.  
[6 marks]
- iv A computer contains many electronic, electric and mechanical components known as hardware. Provide THREE (3) categories of computer hardware.  
[6 marks]

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**QUESTION 2 [20 marks]**

i Briefly describe each of the following terms:

- a. Collaboration software
- b. Latency
- c. Bandwidth
- d. Multimedia

[8 marks]

ii With the aid of an illustration, briefly explain the features of a star network topology. Hence, provide THREE (3) advantages of this network topology.

[6 marks]

iii Provide THREE (3) advantages of Vector graphic over Bitmap graphic type.

[6 marks]

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**QUESTION 3 [20 marks]**

- i State all SIX (6) steps of a program development life cycle. [6 marks]
- ii The form shown in Figure 1 determines the larger number among two input numbers entered by a user. Should both input numbers are equal to each other, it will be showing "The two numbers are equal." at the output textbox. It also validates the inputs, and shows an error message in case an invalid input has been entered.  
Write a code segment in Visual Basic for the form. Use the control names as labeled. The code segment is to be attached to the *Find Larger Number* button. [14 marks]

Figure 1 shows a Visual Basic form titled "Maximum". The form contains the following controls:

- A text box labeled "First number:" with the control name `txtFirstNum`.
- A text box labeled "Second number:" with the control name `txtSecondNum`.
- A button labeled "Find Larger Number".
- A text box labeled "Larger number is" with the control name `txtResult`.

Figure 1

**End of Paper**